United States Department of the Interior

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In Reply Refer To:
AESO/SE
02-21-05-F-0380 July 27, 2005

Mr. Gene Blankenbaker
Forest Supervisor
Tonto National Forest
2324 East McDowell Road
Phoenix, Arizona 85006

Dear Mr. Blankenbaker:

Thank you for your request for formal consultation with the U.S. Fish and Wildlife Service (FWS) pursuant to section 7 of the Endangered Species Act of 1973 (16 U.S.C. 1531-1544), as amended (Act). Your request was dated March 17, 2005, and received by us on March 30, 2005. At issue are impacts that may result from the proposed Salt Analysis Area project located on the Pleasant Valley Ranger District, Tonto National Forest, Gila County, Arizona. In your letter, you concluded that proposed action "may affect, is likely to adversely affect" the threatened Mexican spotted owl (*Strix occidentalis lucida*) and its critical habitat.

In your letter, you stated that the proposed action "may affect, but is not likely to adversely affect" the threatened Chiricahua leopard frog (*Rana chiricahuensis*). We concur with your determination and provide our rationale in Appendix A.

This biological opinion is based on information provided in the February 28, 2005, biological assessment and evaluation (BAE), information discussed during a meeting with Duke Klein of your staff on April 15, 2005, an email sent from Mr. Klein, May 23, 2005, with supplemental information necessary to initiate formal consultation, and other sources of information. Literature cited in this biological opinion is not a complete bibliography of all literature available on the species of concern, timber harvests and fuel treatments and their effects, or on other subjects considered in this opinion. A complete administrative record of this consultation is on file at the Phoenix, Arizona Ecological Services Field Office (AESO).

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CONSULTATION HISTORY

February 12, 2004: The Forest initiated informal consultation on the Salt Analysis Area. There were questions by the Forest regarding consultation history. According to the May 12, 1997, FWS letter to the Forest, we concluded that the Forest did not complete consultation for MSO. Subsequently, we were informed that the eastern half of the Salt Analysis Area (approximately 480 acres) was treated under the assumption that consultation was complete. The Forest was advised to start the process over and complete the analysis and consultation for MSO and critical habitat for the remaining untreated acres. The Forest was also advised that the units which were previously treated should not be included in the effects analysis of the BAE, but should be added into the environmental baseline.

March 12, 2004: We received the draft BAE through email.

April 6, 2004: We provided comments on the draft BAE through email.

March 30, 2005: We received the March 17, 2005, letter requesting initiation of formal section 7 consultation and a final BAE.

April 15, 2005: Meeting with Duke Klein to discuss additional items necessary to initiate formal consultation.

May 10, 2005: We sent a letter requesting additional items necessary to initiate formal consultation.

May 23, 2005: We received the additional information necessary to initiate formal consultation through email.

June 29, 2005: Draft BO submitted to the Forest.

July 22, 2005: We received a request from the Forest to finalize the biological opinion.

BIOLOGICAL OPINION

DESCRIPTION OF THE PROPOSED ACTION

The Salt Analysis Area is located approximately five miles north and east of Young, Gila County, Arizona. This 8,200 acre analysis area is located in all or portions of T10N, R14E, Sections 10-16, 21-27, 34 and 35; and T10N, R15E, Sections 7-8, 17-20, and 30.

The objectives of the Salt Analysis Area project is to improve wildlife forage/cover ratios, treat dwarf mistletoe, increase stand diversity, and manage potential old growth stands toward old growth. These objectives are consistent with the management emphasis for the area as outlined in the Forest Plan.

A contractor was selected by the Forest to harvest timber within selected areas of the Salt Analysis Area. The completion of all Forest Service activities including timber, fire, and road management treatments outlined below depend on the completion of harvest activities by the contractor prior to July 31, 2005. A three month extension could be granted to the contractor if the Forest concludes the contractor has met all of the requirements necessary to qualify for the extension. If the contactor does not choose to implement harvest activities, the Forest will not implement any activities associated with the Environmental Assessment (EA) and associated treatments outlined in this biological opinion.

Timber Treatments

The EA identified up to 1,888 acres of timbered land for harvest. This included 1,551 acres of sanitation treatments, 162 acres of intermediate thinning cuts with sanitation treatments included, and 175 acres of wildlife openings. The eastern half of the analysis area (approximately 480 acres) was previously treated with all proposed actions; however, only 39 acres were treated with prescribed burning and 441 acres remain to be burned. A total of eight cutting units (approximately 509 acres) in the western half of the analysis area remain untreated (see Map 1 and Table 1). The eight cutting units will be treated according to the prescriptions outlined below and in Table 1. The prescriptions below are separated by individual activities associated with the contractor and the Forest.

<u>To be completed by the contractor:</u>

- Harvest of sawtimber (>9”diameter at breast height (dbh))

Harvest of cutting units will take place prior to July 31, 2005, unless a three month extension is granted by the Forest.

The following treatments outlined below are pending completion of the above sawtimber harvest. The Forest <u>will</u> <u>not</u> implement any additional treatments if the contractor’s obligation is not fulfilled.

<u>To be completed by the Forest:</u>

- Timber stand improvement (TSI) (removal of 5-9” dbh trees)
- Road closures
- Burning of slash created by harvest
- Seeding and water barring as needed
- Additional actions include the potential removal of fuelwood or small fuels, the construction of 15- to 30-acre wildlife forage areas, and the construction of 0.25- to 2-acre openings during mistletoe sanitation treatments. Wildlife forage areas will be laid out with the assistance of a wildlife biologist. Within these openings, large trees and/or groups of large trees will remain to create openings for wildlife forage.

Slash in all units will be lopped and scattered. Machine piling of activity slash (slash created from timber treatments) will occur only at landings. Landings will be 0.25 acre to 0.5 acre in

size and will utilize existing openings to prevent further habitat removal. Timing for the completion of Forest activities except for prescribed fire were not provided for this consultation.

For the purpose of the following discussion, the activities completed by the contractor will be referred to as "commercial harvest treatments" and activities completed by the Forest will be referred to as "silvicultural treatments".

Table 1. Salt Analysis Area, treatments by cutting unit for untreated units.

Unit Number	Type of Cut	Number of Acres	Management Age Class
2	Sanitation[1] and wildlife area[2]	139	Poles/small sawtimber 60-80yrs
3	Sanitation/weeding[3]	28	Poles (40-60) and 60-80 yrs)
4	Sanitation/wildlife area/weeding	38	Poles/small sawtimber 60-80yrs
5	Intermediate thinning from below[4]/ weeding	7	Poles/small sawtimber 60-80yrs
6	Intermediate thinning from below/weeding	7	Poles/small sawtimber 60-80yrs
8	Sanitation	30	Poles/small sawtimber 60-80yrs
9	Sanitation/wildlife area	114	Poles/small sawtimber 60-80yrs
10	Sanitation with under thinning[5] /wildlife area	146	Poles/small sawtimber 60-80yrs

[1] **Sanitation**: Removal of all mistletoe infected ponderosa pine (PIPO) trees greater than 5-6" diameter at breast height (dbh).

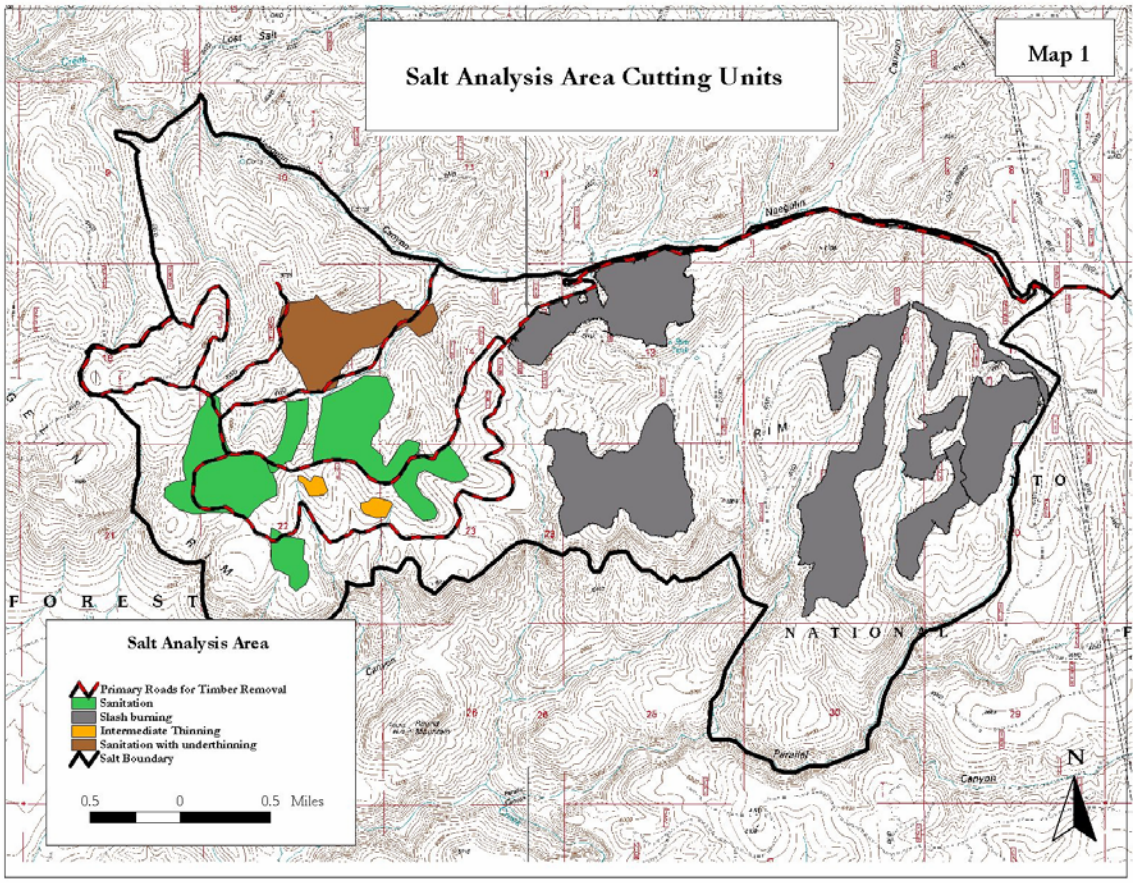
[2] **Wildlife Area**: In 15-30 acre patch, removal of all mistletoe infected PIPO, thin uninfected trees, spacing the largest best formed trees 25-30 feet apart. Leave groups if appropriate. Post sale treatment includes removal of all juniper over 2 ft tall and less than 8 inch dbh and all non Gambel oak over 2-3 ft tall and less than 4" dbh. Seed with grass species.

[3] **Weeding post sale treatment**: Remove all juniper greater than or equal to 2 ft tall and less than or equal to 6-8" dbh and all non Gambel oak greater than or equal to 2-3 ft tall and less than or equal to 4 inch dbh and seeding with grass species.

[4] **Intermediate thinning from below**: Removal of all PIPO greater than 5 inch dbh except for largest diameter, mistletoe free trees which should be spaced 25-30 feet apart. Leave groups where possible.

[5] **Sanitation with underthinning:** Removal of all over 5" dbh mistletoe infected trees. In uninfected groups remove all suppressed intermediate crown class trees and some smaller codominant trees.

Map 1. Salt Analysis Area Cutting Units



Fire

Prescribed burning will take place within all cutting units (except for the 39 acres previously burned on the eastern side) identified in the Salt Analysis Area (approximately 950 acres). This includes the cutting units that were previously treated on the eastern side and the cutting units on the western side. Activity slash that is piled at landings or lopped and scattered throughout the cutting units will be reduced through pile burning or broadcast burning after the completion of all timber treatments. Prescribed burning is expected to take place one year after commercial harvest and silvicultural treatments, between the months of September and January. The purpose of the burn is to reduce activity slash to a more manageable level and improve forest health. The Forest anticipates the direction of smoke during prescribed burning will be to the North and East of the cutting units.

Road Management

The majority of the roads needed to harvest the remaining untreated acres are in place from previous management activities. There will be minor road reconstruction on FR 777 to fix an

existing culvert, but other roads will only require maintenance. There are 34 miles of roads in the analysis area. Sixteen of the 34 miles will be closed after the treatments are complete.

Mitigation Measures

1. Best management practices (BMP's) will be used to minimize nonpoint source pollution from sale activities (see BAE for a complete description).

2. Clay springs and all other seeps found during layout will be protected from harvest activities.

3. Skid trails, landings and temporary roads will be seeded with grass and forb species suitable for wildlife and consistent with the surrounding landscape.

4. Cull logs will be left in the woods to provide large down woody material.

5. Logging, tractor piling, and other ground-disturbing activities will be limited to periods when the soils are frozen or soil moisture conditions are such that damage will not occur.

6. Skid trails and landings will be located to avoid sensitive areas.

7. No harvest activities will occur in riparian areas.

8. Log trucks are not allowed to operate on weekends or holidays and could be restricted to operations between 6 am to 7 pm.

9. Landings will be 0.25 to 0.5 acre in size and will only utilize existing openings.

STATUS OF THE SPECIES

MEXICAN SPOTTED OWL

The Fish and Wildlife Service listed the MSO as a threatened species in 1993 (USDI 1993), and designated critical habitat on August 31, 2004. The primary threats to the species were cited as even-aged timber harvest and catastrophic wildfire, although grazing, recreation, and other land uses were also mentioned as possible factors influencing the MSO population. The Fish and Wildlife Service appointed the Mexican Spotted Owl Recovery Team in 1993, which produced the Recovery Plan for the Mexican Spotted Owl (Recovery Plan) in 1995 (USDI 1995).

The Final Rule listing the MSO as a threatened species (USDI 1993) and the Recovery Plan (USDI 1995) include detailed accounts of the taxonomy and biology of the MSO. The information provided in those documents is included herein by reference. The reproductive biology of MSO in Arizona begins with courtship in March, with eggs laid in late March or, more typically, early April. Incubation is performed entirely by the female and typically lasts for 30 days. The male performs all foraging during this period; the female will only leave the nest to defecate, regurgitate pellets, or receive prey from the male. After the eggs hatch, the female

broods the young for the first couple of weeks. The female will then begin leaving the nest at night to hunt, leaving the owlets unattended for up to several hours. About four to five weeks after hatching, owlets will fledge. The above reproductive chronology is found in the Recovery Plan (USDI 1995); additional reproductive information is also found in the Final Rule (USDI 1993).

The U.S. range of the MSO has been divided into six recovery units (RU), as discussed in the Recovery Plan. The primary administrator of lands supporting the MSO in the United States is the Forest Service.

The proposed action is within the Upper Gila Mountains RU. The Upper Gila Mountains RU is a relatively narrow band bounded on the north by the Colorado Plateau RU and to the south by the Basin and Range-West RU. The southern boundary of this RU includes the drainages below the Mogollon Rim in central and eastern Arizona. Much of the mature stand component on the gentle slopes surrounding the canyons had been partially or completely harvested prior to the species' listing as threatened in 1993; however, MSO nesting habitat remains in steeper areas. MSO are widely distributed and use a variety of habitats within this RU. Owls most commonly nest and roost in mixed-conifer forests dominated by Douglas fir and/or white fir, and canyons with varying degrees of forest cover (Ganey and Balda 1989, USDI 1995). Owls also nest and roost in ponderosa pine-Gambel oak forest, where they are typically found in stands containing well-developed understories of Gambel oak (USDI 1995).

Historical and current anthropogenic uses of MSO habitat include both domestic and wild ungulate grazing, recreation, fuels reduction treatments, resource extraction (e.g., timber, oil, gas), and development. These activities have the potential to reduce the quality of MSO nesting, roosting, and foraging habitat, and may cause disturbance during the breeding season.

Currently, high-intensity, stand-replacing fires are influencing ponderosa pine and mixed conifer forest types in Arizona and New Mexico. In 1994, at least 40,000 acres of nesting and roosting habitat were impacted to some degree by catastrophic fire in the Southwestern Region (Sheppard and Farsnsworth 1995). Between 1991 and 1996, the Forest Service estimated that approximately 50,000 acres of owl habitat had undergone stand-replacing wildfires (G. Sheppard, Forest Service, Kaibab National Forest, Arizona, pers. comm.). However, since 1996, fire has become catastrophic on a landscape scale and has resulted in hundreds of thousands of acres of habitat altered by stand-replacing fires. This is thought to be a result of unnatural fuel loadings, past grazing and timber practices, and a century of fire suppression efforts. The 2002 Rodeo-Chediski fire, at 462,384 acres, burned through approximately 55 PACs on the Tonto and Apache-Sitgreaves National Forests and the White Mountain Apache Reservation. Of the 11,986 acres of PAC habitat that burned on National Forest lands, approximately 55% burned at moderate- to high-severity. Based on the fire severity maps for the fire perimeter, tribal and private lands likely burned in a similar fashion.

Currently, catastrophic wildfire is probably the greatest threat to MSO within the Upper Gila Mountains RU. As throughout the West, fire intensity and size have been increasing within this geographic area. Table 2 shows several high-intensity fires that have had a large influence on MSO habitat in this RU in the last decade. The information in Table 2 is not a comprehensive

analysis of fires in the Upper Gila Mountains RU or the effects to MSO. However, the information does illustrate the influence that stand-replacing fire has on MSO habitat in this RU. This list of fires alone estimates that approximately 11% of the PAC habitat within the RU suffered high- to moderate-intensity, stand-replacing fire in the last seven years.

Table 2. Some recent influential fires within the Upper Gila Mountains Recovery Unit, approximate acres burned, number of PACs affected, and PAC acres burned.

Fire Name	Year	Total Acres Burned	# PACs Affected	# PAC Acres Burned
Rhett Prescribed Natural Fire	1995	20,938	7	3,698
Pot	1996	5,834	4	1,225
Hochderffer	1996	16,580	1	190
BS Canyon	1998	7,000	13	4,046
Pumpkin	2000	13,158	4	1,486
Rodeo-Chediski	2002	462,384	55	~33,000
TOTAL		525,894	84	~43,645

Since the owl was listed, we have completed or have in draft form a total of 152 formal consultations for the MSO and/or critical habitat. These formal consultations have identified incidences of anticipated incidental take of MSO in 337 PACs. The form of this incidental take is almost entirely harm or harassment. These consultations have primarily dealt with actions proposed by the Forest Service, Region 3. However, in addition to actions proposed by the Forest Service, Region 3, we have also reviewed the impacts of actions proposed by the Bureau of Indian Affairs, Department of Defense (including Air Force, Army, and Navy), Department of Energy, National Park Service, and Federal Highway Administration. These proposals have included timber sales, road construction, fire/ecosystem management projects (including prescribed natural and management ignited fires), livestock grazing, recreation activities, utility corridors, military and sightseeing overflights, and other activities. Only two of these projects (release of site-specific owl location information and then-existing forest plans) have resulted in biological opinions that the proposed action would likely jeopardize the continued existence of the MSO.

In 1996, we issued a biological opinion on Region 3 of the Forest Service adoption of the Recovery Plan recommendations through an amendment to their Land and Resource Management Plans (LRMPs). In this non-jeopardy biological opinion, we anticipated that approximately 151 PACs would be affected by activities that would result in incidental take of MSOs, with approximately 91 of those PACs located in the Upper Gila Mountains RU. In addition, on January 17, 2003, we completed a reinitiation of the 1996 Forest Plan Amendments biological opinion, which anticipated the additional incidental take of five MSO PACs in Region 3 due to the rate of implementation of the grazing standards and guidelines, for a total of 156 PACs. Consultation on individual actions under these biological opinions resulted in the harm

and harassment of approximately 243 PACs on Region 3 National Forest System Lands. Region 3 of the Forest Service reinitiated consultation on the LRMPs on April 8, 2004. On June 10, 2005, the FWS issued a revised biological opinion on the amended LRMPs. We anticipated that while the Region 3 Forests continue to operate under the existing LRMPs, take is reasonably certain to occur to an additional 10 percent of the known PACs on Forest Service lands. We expect that continued operation under the plans will result in harm to 49 PACs and harassment to another 49 PACs. To date, consultation on individual actions under the amended Forest Plans, as accounted for under the June 10, 2005, biological opinion has resulted in 5 PACs adversely affected (3 PACs harassed, 1 PAC harmed, and 1 PAC harmed and harassed), with 5 of those in the Upper Gila Mountains RU.

Mexican spotted owl Critical Habitat

The final MSO critical habitat rule (USDI 2004) designated approximately 8.6 million acres of critical habitat in Arizona, Colorado, New Mexico, and Utah, mostly on Federal lands (USDI 2004). Within this larger area, critical habitat is limited to areas that meet the definition of protected and restricted habitat, as described in the Recovery Plan. Protected habitat includes all known owl sites and all areas within mixed conifer or pine-oak habitat with slopes greater than 40 percent where timber harvest has not occurred in the past 20 years. Restricted habitat includes mixed conifer forest, pine-oak forest, and riparian areas outside of protected habitat.

The primary constituent elements (PCEs) for MSO critical habitat were determined from studies of their habitat requirements and information provided in the Recovery Plan (USDI 1995). Since owl habitat can include both canyon and forested areas, primary constituent elements were identified in both areas. The PCEs which occur for the MSO within mixed-conifer, pine-oak, and riparian forest types that provide for one or more of the MSO's habitat needs for nesting, roosting, foraging, and dispersing are in areas defined by the following features for forest structure and prey species habitat:

Primary constituent elements related to forest structure include:

- A range of tree species, including mixed conifer, pine-oak, and riparian forest types, composed of different tree sizes reflecting different ages of trees, 30% to 45% of which are large trees with dbh of 12 inches or more;

- A shade canopy created by the tree branches covering 40% or more of the ground; and,

- Large, dead trees (snags) with a dbh of at least 12 inches.

Primary constituent elements related to the maintenance of adequate prey species include

- High volumes of fallen trees and other woody debris;

- A wide range of tree and plant species, including hardwoods; and

- Adequate levels of residual plant cover to maintain fruits and seeds, and allow plant regeneration.

The forest habitat attributes listed above usually are present with increasing forest age, but their occurrence may vary by location, past forest management practices or natural disturbance events, forest-type productivity, and plant succession. These characteristics may also be observed in younger stands, especially when the stands contain remnant large trees or patches of large trees. Certain forest-management practices may also enhance tree growth and mature stand characteristics where the older, larger trees are allowed to persist.

There are 13 critical habitat units located in the Upper Gila Mountains RU that contain 3.1 million acres of designated critical habitat. This biological opinion does not rely on the regulatory definition of "destruction or adverse modification" of critical habitat at 50 CFR 402.02. Instead, we have relied upon the statutory provision of the Act to complete the following analysis with respect to critical habitat.

ENVIRONMENTAL BASELINE

The environmental baseline includes past and present impacts of all Federal, State, or private actions in the action area, the anticipated impacts of all proposed Federal actions in the action area that have undergone formal or early section 7 consultation, and the impact of State and private actions which are contemporaneous with the consultation process. The environmental baseline defines the current status of the species and its habitat in the action area to provide a platform to assess the effects of the action now under consultation.

Approximately 480 acres of the Salt Analysis Area was commercially harvested prior to completion of consultation. A total of 262 acres of the 480 acres harvested were within MSO restricted habitat. The Forest estimated the number of trees harvested within restricted habitat to be 183 trees 18-24" and 60 trees >24". In addition to the acres harvested, 39 acres were treated with prescribed fire. The number of acres and treatments mentioned above are considered part of the environmental baseline; all other treatments within the 480 acres are discussed in the proposed action of this biological opinion.

For this consultation we are defining the action area as all cutting units (shown in Map 1) and Forest Service roads (shown in Map 1) used for logging operations within the Salt Analysis Area and the primary roads used for logging operations outside of the Salt Analysis Area, including Forest Road (FR) 411 traveling east from the project area to FR 512 and north on FR 512 to US 260. The action area also includes the area adjacent to the treatment areas including Parallel Canyon (120516), Lost Salt (120515), and Colcord Canyon (120531) Protected Activity Centers (PACs) due to indirect effects from noise and/or smoke disturbance within and outside of the Salt Analysis Area boundary.

A. STATUS OF THE SPECIES AND CRITICAL HABITAT WITHIN THE ACTION AREA

The Salt Analysis Area is in the Transition and Upper Sonoran Life Zones below the Mogollon Rim. Habitat types found in the analysis area include: mixed conifer, ponderosa pine, riparian, oak woodland, juniper woodland, and chaparral. Structural diversity, especially within the ponderosa pine stands, is low. Elevations range from 5,600 to over 6,900 feet.

A total of 2,400 acres of pine-oak restricted habitat and 43 acres of mixed-conifer restricted habitat were identified in the Salt Analysis Area. These acres do not meet the target/threshold conditions identified in Table III.B.1 of the MSO Recovery Plan (USDI 1995). Protected habitat occurs within the Salt Analysis Area; however, treatments are not proposed within these areas. The 2,400 acres of pine-oak restricted habitat and 43 acres of mixed-confiner restricted habitat are within the Upper Gila Mountains RU-10 boundary and are considered MSO critical habitat.

There are three PACs included in the action area. Parallel Canyon, is found within the boundaries of the Salt Analysis Area, Lost Salt is north and adjacent to the Salt Analysis Area, and Colcord Canyon is within 0.5 mile of the analysis area and approximately 1.5 miles from the nearest project action. Table 3 shows the survey history of Lost Salt and Parallel Canyon PACs. The Forest did not provide any survey history for the Colcord Canyon PAC.

Table 3

PAC Name	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Lost Salt 120515	NI	O-2Y	O-2Y	O-NU	O-NU	IM-NR	O-NN	O-NU	O-3Y	O-NU	O-NU	O-NU	M-F
Parallel Canyon 120516	P	O-NU	O-NU	O-NU	NI	NI	IM-NR	NI	NI	NI	NR	NR	NI

LEGEND

O-	Pair occupancy inferred or confirmed	NY-	Nesting status undetermined no young produced
M-	Male inferred or confirmed	NN-	Non-nesting/Non-reproduction confirmed
F-	Female inferred or confirmed	NA-	Nest Abandoned
P-	Presence of a single owl inferred or confirmed sex	NF-	Nest Failed
Y-	Number of young fledged	A-	Absence or unoccupied
NI-	No information	IM-NR-	Informally monitored – no response or location
NU-	Nesting status undetermined		

Additional surveys were completed within and surrounding Salt Analysis Area in 1992, 1993, 1996, 1997, 1999, and 2001 through 2003. The last response from a MSO inside the Salt Analysis Area was in 1993. A map of the survey locations are found in the BAE.

B. FACTORS AFFECTING SPECIES AND CRITICAL HABITAT WITHIN THE ACTION AREA

Since the Forests' original assessment of the Salt Analysis Area in 1992, the habitat conditions within the action area have changed due to drought and beetle infestations. Several years of drought has increased the susceptibility of ponderosa pine and pinon-juniper trees to insect infestation. The combination of tree mortality from drought and/or insects is prevalent within the action area and habitat surveys within the Salt Analysis Area have not been completed recently; therefore, the extent of tree mortality is unknown. Tree mortality is expected to continue within the action area as long as drought conditions persist. PCEs persist within the

action area even though drought and insect infestation have altered elements of the forest structure. The conservation role of this critical habitat segment is important to the Upper Gila Mountain RU, and the critical habitat as a whole.

Other activities affecting the MSO within the action area include: increasing levels of recreation use in the summer months (dispersed camping, hiking, horseback riding, bicycling, hunting, and Off-Highway Vehicle (OHV) use); vehicle traffic along FR 512 between the town of Young and State Highway 260; and additional OHV use along primitive Forest roads within and surrounding the action area.

EFFECTS OF THE ACTION

Effects of the action refer to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated and interdependent with that action, that will be added to the environmental baseline. Interrelated actions are those that are part of a larger action and depend on the larger action for their justification. Interdependent actions are those that have no independent utility apart from the action under consideration. Indirect effects are those that are caused by the proposed action and are later in time, but are still reasonably certain to occur.

MSO Protected Habitat

There are three PACs within the action area Parallel Canyon PAC, Lost Salt PAC, and Colcord Canyon PAC. We do not expect any direct impacts to MSO within PACs or the habitat in the PAC boundaries because habitat altering activities will not occur within these areas. Indirect effects to MSO within the PACs will occur from noise and/or smoke from harvest and silvicultural treatments.

Noise Disturbance

Noise from commercial logging equipment, logging trucks, and other equipment used for silvicultural treatments is likely to impact MSO in Lost Salt PAC and Colcord Canyon PAC. Lost Salt PAC is adjacent to the Salt Analysis Area boundary and FR 411, the main logging road that intersects with FR 512. Commercial harvest and silvicultural units are approximately 0.25 mile from the Lost Salt PAC boundary and approximately one mile from the known nest/roost sites. FR 411 is adjacent to the PAC boundary and approximately 0.75 mile from the known nest/roost site in Lost Salt PAC. Because the distance from proposed activities to MSO nest/roost sites are 0.25 mile and greater, and all treatments are limited to daytime operations, noise disturbance to nesting/roosting MSO is expected to be limited. However, information on MSO feeding habits found in the Recovery Plan shows that occasional diurnal foraging has been documented (USDI 1995); therefore, noise from logging trucks during the day on FR 411 may disturb foraging MSO.

The western boundary of Colcord Canyon PAC is adjacent to the main logging road FR 512; therefore, noise from logging trucks may disturb foraging MSO in Colcord Canyon PAC.

Parallel Canyon PAC is located within the south and eastern side of the Salt Analysis Area boundary. Prescribed fire is the only treatment proposed near the PAC; therefore, MSO within Parallel Canyon PAC will not be impacted by noise disturbance.

Smoke Disturbance

The Forest anticipates burning between 50 to 75 percent of ground fuels and 80 percent of the activity slash in the cutting units. Smoke from prescribed fire operations may disturb MSO in Lost Salt PAC (day and night), Parallel Canyon PAC (night only), and Colcord Canyon PAC (day and night). The anticipated direction of smoke during burning operations is expected to be north and east of the cutting units. Colcord Canyon PAC is north of the cutting units and Lost Salt PAC is east of the cutting units. Due to the anticipated smoke movement, both PACs will likely receive smoke during the day and at night when the smoke settles towards the ground. Parallel Canyon PAC is south of the cutting units; therefore, disturbance from smoke is less likely to occur in the day. However, when smoke settles to the ground at night, disturbance from smoke is likely to occur. The intensity of smoke from burning operations is not known at this time and will depend on the weather conditions (wind speed and direction) at the time of burning, but is not expected to be of a high intensity or long duration.

MSO Restricted Habitat

The Forests' description of the proposed action states that the objectives of the Salt Analysis Area project is to improve wildlife forage/cover ratios, treat dwarf mistletoe, increase stand diversity, and manage potential old growth stands toward old growth. The BAE also states that "this treatment was designed to treat trees infected with mistletoe, not directly to decrease the risk of catastrophic wildfire." The Recovery Plan (as amended in the FWS June 13, 2001, letter to Dr. William M. Block) states: "Retain trees >24 inches unless overriding management situations require their removal to protect human safety and/or property (for example, the removal of hazard trees along roads, in campgrounds, and along power lines); and, "except for treatments designed to reduce the risk of catastrophic wildfire described below, retain hardwoods, large down logs, large trees (>18 inches), and snags." The treatments within the action area do not follow these guidelines, nor do project objectives fall within the recommended exceptions to retain the listed key habitat components. We understand the removal of surface fuels and snags will likely reduce the risk of catastrophic fire in the future; however, justifications for overriding management situations (to protect human safety and/or property) are not included in the BAE.

Harvest and Silvicultural Treatments

The proposed project actions will directly affect MSO restricted pine-oak habitat through commercial harvest and silvicultural treatments. Approximately 2,400 acres of pine-oak restricted habitat occurs within the Salt Timber Analysis Area. Implementation of the proposed project will result in disturbance to approximately 562 acres (~300 acres treated with commercial harvest and silvicultural treatments and ~262 acres treated with prescribed fire only) of the 2,400 acres of pine-oak restricted habitat.

The commercial harvest prescriptions, sanitation, and sanitation with underthinning treatments found in Table 1, will remove trees >18" dbh. Although some trees >18" dbh will be retained, the BAE is not clear how many of those trees will remain within the ~300 acres. Also, the estimated current and projected basal area after treatments is not known because of the lack of site-specific data and assumptions that do not reflect current conditions on the ground.

This paragraph was included in the BAE under the Analysis of Effects section: "*The timber cruise data collected in 1992 was not collected with the MSO restrictions in mind, nor was it collected by stand. Because of this, it is difficult to estimate the number of 18 inch trees that will be or have been cut in cutting units with restricted habitat. Likewise it is impossible to determine what portion of those marked* (trees marked for removal) *for harvest is actually within restricted habitat. Table MSO-2 shows the number of 18"-24" and >24"dbh trees to be cut in each cutting unit containing restricted habitat. The total number of trees harvested within each stand that meets the Recovery Plan definition was estimated using the assumption that trees are equally dispersed across the cutting units. This is obviously an incorrect assumption, but the data for these cutting units was collected in groups. These groups were 9"-23.5", and 23.5" and above and cannot be broken out by dbh, nor can they be identified as to stand."*

Prescribed Fire

Additional direct effects include impacts to 562 acres of restricted pine-oak habitat from prescribed fire. The effects of prescribed fire include both negative and beneficial effects on MSO habitat. Beneficial aspects would include increased response of herbaceous vegetation after a fire. Negative effects would include the near-term loss of herbaceous cover, down logs, and snags. The Forest anticipates burning between 50 to 75 percent of ground fuels in a mosaic pattern throughout the treatment area, and the consumption of snags will be close to 60 percent. Activity slash is expected to be reduced by 80 percent. The effects of fire on the prey base of the MSO are complex and are dependent on the variations in fire characteristics and prey habitat. Fire intensity, size, and behavior are influenced by numerous factors such as vegetation type, moisture, fuel loads, weather, season, and topography. Fire can effectively alter vegetation structure and composition, thereby affecting small mammal habitat. The initial effects of fire are likely to be detrimental to rodent populations as cover and plant forage species would be reduced.

The anticipated fuel consumption from prescribed fire within the action area will reduce vegetative components (both structure and composition) necessary for MSO prey habitat. These effects will occur immediately after the fire and may potentially reduce the numbers of prey species within the cutting units. The anticipated reduction in prey species within the cutting units are short-term; however, because prescribed fire will not occur within Parallel Canyon PAC, Lost Salt PAC, and Colcord Canyon PAC, we are not reasonably certain the reduction of prey species outside of these PACs will impact foraging MSO.

MSO Critical Habitat

The Salt Analysis Area is within the Upper Gila Mountains RU-10 boundary for MSO critical habitat. Approximately 562 acres of the total 2,400 acres of pine-oak restricted habitat (critical

habitat) within the Salt Analysis Area will be treated. Commercial harvest and silvicultural treatments will affect PCEs however, the conservation role of the critical habitat is expected to be retained. The PCEs are listed below with the evaluation of effects as they pertain to the proposed actions.

Primary constituent elements related to forest structure

1. A range of tree species, including mixed conifer, pine-oak, and riparian forest types, composed of different tree sizes reflecting different ages of trees, 30% to 45% of which are large trees with dbh of 12 inches or more.

   Mixed conifer and riparian habitats occur within the Salt Analysis Area; however, no treatments are proposed within these areas. The areas affected by the proposed actions are limited to pine-oak habitat; therefore, the "range of tree species" will not be affected by the proposed actions. The "different tree sizes reflecting different ages of trees" within the pine-oak habitat after commercial harvest and silvicultural treatments will be affected; however, because of the lack of site-specific data was not provided, the degree of impacts can not be defined.

2. A shade canopy created by the tree branches covering 40% or more of the ground.

   Except for the 15- to 30-acre wildlife areas, all other treatments are expected to retain a shaded canopy cover of 40% or more throughout the cutting units.

3. Large, dead trees (snags) with a dbh of at least 12 inches.

   Consumption of snags within the treatment areas is expected to be approximately 60%, leaving 40% of the large dead trees to remain after treatments. Due to the continuing mortality of ponderosa pine as a result of drought conditions and beetle infestation in the area, recruitment of additional, large dead trees is expected within treatment areas.

Primary constituent elements related to the maintenance of adequate prey species

As mentioned previously, the effects of prescribed fire on the foraging habitat of MSO are variable. The combination of commercial harvest and silvicultural treatments (including fire), will likely result in the near-term loss of herbaceous cover, down logs, and snags. The beneficial effects from treatments will likely include an increased response of herbaceous vegetation after a fire.

4. High volumes of fallen trees and other woody debris.

   The anticipated consumption of ground fuels from prescribed fire treatments within the cutting units is between 50 and 75% and activity slash is expected to be reduced by 80%. Without information on the current fuel loads within the cutting units it is difficult to correlate the quantity of "fallen trees and other woody debris" to the degree of consumption affected by the prescribed fire treatments. Therefore, we anticipate that the consumption of

ground fuels and activity slash from prescribed fire treatments is substantial (25% to 50% will remain after treatments) and is not expected to leave a "high volume of fallen trees and other woody debris" within the cutting units.

5. A wide range of tree and plant species, including hardwoods.

   Commercial harvest treatments and silvicultural treatments will remove ponderosa pine, juniper, and non-Gambel oak species within cutting units. Not all units have the same treatments (see Table 1); for example, only 298 acres of the total 562 acres of critical habitat within the cutting units are prescribed to remove juniper and non-Gamble oak. Therefore, the combination of all treatments will not affect the "wide range of tree and plant species, including hardwoods" within the cutting units.

6. Adequate levels of residual plant cover to maintain fruits and seeds, and allow plant regeneration.

   The anticipated consumption of ground fuels from prescribed fire treatments within the cutting units is between 50 and 75% and activity slash is expect to be reduced by 80%. These actions will likely consume portions of the lower-level plant cover species and will likely reduce the number of fruits and seeds for plant regeneration. The commercial harvest and silvicultural treatments will also open up the mid- to upper-level canopy within the cutting units.

   The high percentage of consumption within the cutting units combined with the level of commercial harvest and silvicultural treatments is expected to result in short-term adverse effects to the "levels of residual plant cover to maintain fruits and seeds" within the cutting units. However, the beneficial effects of fire will likely increase the response of herbaceous vegetation after treatments.

CUMULATIVE EFFECTS

Cumulative effects include the effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area considered in this biological opinion. Future Federal actions that are unrelated to the proposed action are not considered in this section because they require separate consultation pursuant to section 7 of the Act. Local and private actions, including camping, hiking, horseback riding, bicycling, hunting, and OHV use, will continue in the action area. These activities have the potential to cause disturbance to MSO and therefore contribute as cumulative effects to the proposed action. However, the majority of these actions will occur during the day and are considered to be of lesser concern to breeding/foraging MSO within the action area.

CONCLUSION

After reviewing the current status of MSO and its critical habitat, the environmental baseline for the action area, the effects of the proposed Salt Analysis Area project and the cumulative effects, it is the FWS biological opinion that the Salt Analysis Area, as proposed, is not likely to

jeopardize the continued existence of the MSO. Critical habitat for this species has been designated at Upper Gila Mountains RU-10; however, no destruction or adverse modification of that critical habitat is anticipated. We present these conclusions for the following reasons:

1. Skid trails, landings and temporary roads will be seeded with grass and forb species suitable for wildlife and consistent with the surrounding landscape.

2. Cull logs will be left in the woods to provide large down woody material.

3. Logging, tractor piling, and other ground-disturbing activities will be limited to periods when the soils are frozen or soil moisture conditions are such that damage will not occur.

4. Skid trails and landings would be located to avoid sensitive areas.

5. No harvest activities will occur in riparian areas.

6. Log landings will be 0.25 to 0.5 acre in size and will only utilize existing openings.

7. No new roads will be constructed within the Salt Analysis Area.

8. Sixteen miles of roads within the Salt Analysis Area will be closed.

9. Approximately 562 acres (23%) of the total 2,400 acres of pine-oak restricted habitat (critical habitat) within the Salt Analysis Area will be treated. That equates to 0.1% of the total critical habitat acres in the Upper Gila Mountains RU-10, with the conservation benefits of the critical habitat remaining intact.

10. No commercial harvest and/or silvicultural treatments will occur within PACs.

The conclusions of this biological opinion are based on full implementation of the project as described in the Description of the Proposed Action section of this document, including any Conservation Measures that were incorporated into the project design.

INCIDENTAL TAKE STATEMENT

Section 9 of the Act and Federal regulations pursuant to section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. "Harm" is further defined (50 CFR 17.3) to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. "Harass" is defined (50 CFR 17.3) as intentional or negligent actions that create the likelihood of injury to listed species to such an extent as to significantly disrupt normal behavior patterns which include, but are not limited to, breeding, feeding or sheltering. "Incidental take" is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity. Under the terms of section 7(b)(4) and section 7(o)(2), taking that is incidental to and not

intended as part of the agency action is not considered to be prohibited taking under the Act provided that such taking is in compliance with the terms and conditions of this Incidental Take Statement.

AMOUNT OR EXTENT OF TAKE

The FWS does not anticipate that the proposed action will incidentally take any Mexican spotted owls. We believe this information for the following reasons:

1. The area within Parallel Canyon PAC, Lost Salt PAC, and Colcord Canyon PAC will not incur any habitat altering activities.

2. Noise and smoke disturbance to MSO will be limited because the distances from proposed activities to MSO nest/roost sites are ¼ mile and greater.

EFFECT OF THE TAKE

In this biological opinion, the FWS determined that this level of anticipated take is not likely to result in jeopardy to the species or destruction or adverse modification of critical habitat.

CONSERVATION RECOMMENDATIONS

Section 7(a)(1) of the Act directs Federal agencies to utilize their authorities to further the purposes of the Act by carrying out conservation programs for the benefit of endangered and threatened species. Conservation recommendations are discretionary agency activities to minimize or avoid adverse effects of a proposed action on listed species or critical habitat, to help implement recovery plans, or to develop information.

1. We recommend that the Parallel Canyon PAC, Lost Salt PAC, and Colcord Canyon PAC be monitored annually for at least five years and that the results of the monitoring be provided to us.

In order for the FWS to be kept informed of actions minimizing or avoiding adverse effects or benefiting listed species or their habitats, the FWS requests notification of the implementation of any conservation recommendations.

REINITIATION NOTICE

This concludes formal consultation on the actions outlined in this biological opinion. As provided in 50 CFR §402.16, reinitiation of formal consultation is required where discretionary Federal agency involvement or control over the action has been retained (or is authorized by law) and if: (1) the amount or extent of incidental take is exceeded; (2) new information reveals effects of the agency action that may affect listed species or critical habitat in a manner or to an extent not considered in this opinion; (3) the agency action is subsequently modified in a manner that causes an effect to the listed species or critical habitat not considered in this opinion; or (4) a new species is listed or critical habitat designated that may be affected by the action. In

instances where the amount or extent of incidental take is exceeded, any operations causing such take must cease pending reinitiation.

The FWS appreciates the Forests' efforts to identify and minimize effects to listed species from this project. For further information please contact Ryan Gordon (x225) or Debra Bills (x239). Please refer to the consultation number, 02-21-05-F-0380, in future correspondence concerning this project.

Sincerely,

/s/ Steven L. Spangle
Field Supervisor

cc: Regional Director, Fish and Wildlife Service, Albuquerque, NM (ARD-ES)
Bob Broscheid, Arizona Game and Fish Department, Phoenix, AZ
Forest Biologist, Pleasant Valley Ranger District, Young, AZ (Attn: Duke Klein)
Shaula Hedwall, Fish and Wildlife Service, Flagstaff, AZ

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APPENDIX A

Chiricahua leopard frog Concurrence

The information provided herein takes into account the Description of the Proposed Action section of this biological opinion and your effects determination presented for this species in the BAE.

At this time there is no known occupied Chiricahua leopard frog habitat within the action area. Surveys were completed by Forest personnel to determine the presence of Chiricahua leopard frogs and their habitat within and surrounding the Salt Analysis Area. No surveys were completed in the drainages of the Salt Analysis Area. There are no perennial streams within the Salt Analysis Area. Information provided in the BAE indicates that streams in the area are ephemeral and the area as a whole is relatively dry. Although this information may be true, these areas may provide suitable habitat for the frog during wet periods of the year.

There are five springs and eight tanks that are within one mile of the cutting units. No CLF were found in these water bodies during surveys ranging from 1997 to 2003. Four of these waters remain unsurveyed; however, the Forest will survey these areas prior to project implementation. Bottle Springs is the closest known population to the cutting units within Salt Analysis Area (based on 2003 and 2004 survey data). Bottle Springs is greater than one mile overland and over three miles upstream (following intermittent or ephemeral drainages) from all cutting units; therefore, Bottle Springs is not within the reasonable dispersal distance (1 mile overland or 3 miles along an ephemeral or intermittent drainage from occupied habitat) to suitable habitat within the Salt Analysis Area.

Based on information provided in the BAE, we concur with the Forests' determination that the proposed action "may affect, but is not likely to adversely affect" the Chiricahua leopard frog. We base this determination on the following:

1. Unsurveyed tanks and springs will be surveyed according to the FWS protocol (U.S. Fish and Wildlife Service 2003) prior to project implementation. Should occupancy by this species be documented the consultation would be re-initiated prior to continuing with the project.

2. The Forest anticipates the aquatic habitats will be surveyed every five years, or more often if possible or deemed necessary by discovery of a new population near suitable or potential habitat within the action area.

3. Should Chiricahua leopard frogs be found in the area before or during project implementation, project activities would be halted, re-evaluated, and dropped and or modified. Implementation would resume only after approval by Forest Service biologists and the FWS.

4. All water bodies surveyed within one mile of the cutting units were unoccupied.

5. All cutting units are greater than one mile overland from known occupied habitat.

6. All cuttings units are greater than three miles upstream (following intermittent or ephemeral drainages) from known occupied habitat.

7. BMPs and other mitigation measures will be in place to reduce sedimentation into watersheds from commercial harvest and silvicultural treatments.

No further section 7 consultation on the effects to Chiricahua leopard frog is required for this project at this time. Should the proposed action change, or should new information become available that indicates that the action may affect threatened and endangered species or critical habitat in a manner or extent not considered in our review, these conclusions may need to be re-evaluated.

Literature Cited

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